ORGANIZATIONAL FUNCTION	INFRASTRUCTURE FUNCTION			
	COMMUNICATIONS (voice, data, image and video)	**SOFTWARE (operating and applications)**	**HARDWARE DEVICES (PC, server, mainframe, peripherals, etc.)**	**DATA**
CUSTOMER ASSISTANCE (help use and fix)	· diagnose user problems · coordinate solutions · track and report problems · user training on network access/use	· diagnose user problems · user questions · coordinate solutions · track and report problems · test new features · user training on specific software and reporting tools	· diagnose user problems · user questions · equipment problems · coordinate solutions · track and report problems · training on use of hardware · disaster recovery · repair and replacement	· data analysis · user ad-hoc reporting · user support areas · reports/extract information
OPERATIONS (day-to-day)	· access · security · installation · traffic control/scheduling · work orders (add/change/move) · back-ups/library · recovery-restart · version control · version compatibility	· installation · version compatibility · version control · system performance · security - OS & Applications	· inventory management · installation · high volume report production · high volume report distribution · order processing · security - Site/physical	· data protection · version control · version compatibility · data quality control · back-up · data base performance monitoring, tuning
CONSTRUCTION (new)	· business analysis/research · needs assessments · business process modeling · architecture · design framework of communication system · implementation · vendor contracts/mgmt · compatibility · pathways/linkages	· business analysis/research · needs assessment · business process modeling · documentation · architecture · program development · evaluate vendor software · modify software · interfaces · vendor contracts/mgmt	· business analysis/research · evaluate and recommend options · negotiate with vendors · vendor contracts/mgmt	· business analysis/research · design & create · modeling data · documentation · vendor contracts/mgmt · inventory - data dictionary
PLANNING (strategic)	· resource utilization · disaster planning · traffic volume-system performance · acquisition strategy · new technologies · wiring standards · communications software standards · compatibility · security · cost benefit analysis	· resource utilization · disaster planning · change control management · evaluate new products · new technologies · compatibility · security · cost benefit analysis	· resource utilization · disaster planning · new technologies · acquisition planning · volume/capacity plan · system features-attributes · configuration · compatibility · security · cost benefit analysis · performance analysis	· enterprise modeling · data storage · change control management · security · compatibility · disaster planning · volume/capacity · data base performance monitoring · resource utilization · cost benefit analysis

INFORMATION SYSTEMS DICTIONARY – SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	COMMUNICATIONS (voice, data, image and video)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CUSTOMER ASSISTANCE (help use and fix) · diagnose user problems · coordinate solutions · track and report problems · user training on network access/use	· Work over phone · Identify system and problem · Know usual responses · Straight forward - follows script - 'canned' answers to most commonly asked questions · Processes in place · Basic investigation · Operational assistance (e.g., helps user with passwords, keystrokes, network download, print queues , new software packages) · De-/insert card in hub · Simple, 'plug-in' replacements · Has back-up (Sr.) staff for advice · Low impact user problems · Isolated incidents · Focused view on specific question	· On-site evaluation or lengthy phone/dial-in diagnosis · Initiates emergency trouble calls to vendors · Resolves most Server-to-Desktop connectivity issues. · Prioritize problems · Conflict resolution · Reload Router · Replacement - evaluate situation and determine part(s) required · Configures client software, i.e. ODBC drivers, E-Mail access, protocol adapters, Fax/OCR/WP integration, host emulation software · More independent - less backup · Recurring or widespread problems · Broader View. Considers implications of questions.	· 'Last Resort' - must solve all outstanding user connectivity problems · Initiates software defect trouble calls to vendors · Multiple jurisdictions involved · High impact in terms of - Number of people affected - Revenue lost · Major state system impact · Research of problems is required · No established solutions · Establishes procedures used by levels 1 & 2 · Trains other staff · Acts independently	
OPERATIONS (day-to-day) · access · security · installation · traffic control/scheduling · work orders (add/change/move) · back-ups/library · recovery-restart · version control · version compatibility	· Works under guidance · Access: - standard, routine processes - adds E-Mail clients · Security - Processes forms · Installations following instructions · monitors software licenses · Has/Uses Documentation · Daily Traffic issues (Watch and recognize) · Troubleshoots local LAN - Server backup/restore - print queue management - configure local mail hub - resource utilization · Network, System Mgmt, and RMON software all from a single vendor	· Minimal Supervision · Access/Security - New or Unique changes (i.e. vendor dial-in) · Does Initial Installations (includes configuration, testing, troubleshooting) · Does Documentation · Traffic/Volume control - Recognizes trends and finds out why · Tuning according to documented instructions · Version Control · Troubleshoots single WAN or multiple local LANs · Network, System Mgmt and RMON from multiple vendors but very tightly integrated · Single organization · Single Server OS and NOS Network tuning according to documented instructions	· Multiple jurisdictions/ organizations · Multiple WANS · Multiple Server OS · Multiple NOS · Works very independently - Recommends changes - Considers costs, timing and other factors · Sets priorities · Prototype Installation (plan & schedule) · Version control - global picture · High impact changes/installations · Network, System Mgmt and RMON from multiple vendors; no integration; some Agency extensions · Creative network tuning · Acts independently	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	COMMUNICATIONS (voice, data, image and video)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CONSTRUCTION (new) · business analysis/research · needs assessments · business process modeling · architecture · design framework of communication system · implementation · vendor contracts/mgmt · compatibility · pathways/linkages	· Assessment: does initial information gathering. Works on lower impact studies · Common projects, (e.g., new drop, new Server releases) · Known construction (no modeling) · Implements part of a plan that's already established (uses checklist) · As member of team installs - new DBMS release - new Server OS - system Mgmt agents - local Network Directory · Highly Standardized environment (e.g., mostly Token Rings, mostly Ethernet, or Network, System Mgmt, and RMON software all from a single vendor) · Works with vendors · Closely Supervised - guided by precedents	· Business Analysis · Introduces technology new to the agency · Bigger or less common projects (e.g., new floor subnet, installs network directory; Firewall software; Hub Server and DBMS; Gateway; and router/hub software releases) · Build implementation plan - Usually one vendor only - Negotiates cross-agency cooperation · Varied environment - mixed devices Assesses minor compatibilities (e.g., Building wiring - Can the connectors handle hooking token ring to Ethernet, with minor adjustments). · Chooses vendors from existing contracts · Acts independently	· Business process modeling · Introduces innovative technology to the State · Big or unusual projects (e.g., WAN, installs that require solving problems new to Agency) · Build implementation plan - Multiple Vendors - Cross agencies - Multiple Jurisdictions · Significant compatibility issues on major projects. (e.g., Token Ring to Fast Ethernet. Will wiring work? Can the network handle it?) · Codes extensions to System Mgmt/ Network software; Firewall software; and Enterprise DBMS software · Sets specifications for bids and chooses vendor	
PLANNING (strategic) · resource utilization · disaster planning · traffic volume-system performance · acquisition strategy · new technologies · wiring standards · communications software standards · compatibility · security · cost benefit analysis	· Acquisition Strategy · Test new software releases - Server OS - Server program products · Client packages · Technology new to agency/ division · Security standards for agency · Disaster Recovery = redundant systems - How long can it be down? · Impact - Variety or complexity of technology being planned for - Who does it affect · Single vendor solution to most issues suffices · Write single-site project plan for small, homogeneous project team	· Select, test with existing systems, and evaluate for adoption: -Server program products - Client packages: · Technology new to state · Public impact if communications exceed capacity · Security - Public Access - Dial in · Write multi-site project plan for project team with varied skills · Single vendor solution to system issues (OS, protocol, mail, DBMS); but multi-vendor integration of program products needed	· Select, test with existing systems, and evaluate for adoption: -OS, NOS -protocols, Gateways -systems mgmt software · Technology new to industry · Security - Internet · Multi-vendor system integration solutions needed - multiple vendor OS/NOS - multiple protocols - multiple mail transports - multiple DBMS vendors · write multi-site, multi-platform project plan for heterogeneous project team	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	SOFTWARE (operating and applications)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CUSTOMER ASSISTANCE (help use and fix) · diagnose user problems · user questions · coordinate solutions · track and report problems · test new features · user training on specific software and reporting tools	· Common user questions from internal employees · Narrow scope or isolated incidents · Standardized environment · Resolves problem by explaining how to use software · Informal Training - one-on-one · Test new features	· New/Unique error messages · Problems affect the entire agency · Variety of Applications & Operating Systems · Resolves problem by fixing software · Conduct formal training (classroom, certification)	· System crash · Problems affect all State agencies · Criticality of system - Time critical system - Revenue being tracked or lost - Regulatory requirements not being met - Public safety issues involved · Develop & prepare formal training (classroom, certification)	
OPERATIONS (day-to-day) · installation · version compatibility · version control · system performance	· Install established software · Precedents available · Standardized environment w/few version issues · Complexity of S/W and its impact on users - no/little impact on other software · Monitor work load and work flow (scheduling, resource use) - Recognize problems - Basic diagnostics	· Install software/technology new to agency · Modifying software to make versions compatible · Software impacts other software - Coordinate changes with other systems./users · Analyze work load and work flow (scheduling, resource use) - Analyze performance - Resolve problems - Contact vendors regarding problems	· Installing software/technology new to industry - Coordination and implementation is complex - Major impact to other systems · Multiple sites/branches - distributed needs within agency. - wide dispersal · Multiple agencies/entities in work flow - performance problems affect multiple vendors/agencies - coordinate solutions - resolve resource competition issues	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	SOFTWARE (operating and applications)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CONSTRUCTION (new) · business analysis/research · needs assessment · business process modeling · documentation · architecture · program development · evaluate vendor software · modify software · interfaces · vendor contracts/mgmt	· Automating a current business process · Small or established project with standards and precedents · Sections of large system · Minimal coordination; works with single user group · No or few version/compatibility considerations · Interfaces: - Similar users - Established security · Similar hardware · Questions to Vendors · Business is static or slow to change	· Automating a new business process · Broader Section on Large Systems · Coordinates (Not much dissention) · Version compatibility issues - consider & identify · Assess performance issues for current project · Interfaces: - Variety of users - Security changes - Dial in users · Variety of hardware · Evaluate vendors (more options) · Business has moderate level of change	· Changing/re-engineering a business process · Unusual/New Businesses · No agency precedents · System Architect · High level of coordination · Conflicting needs/conflicting resolutions · Version Problems · Integrate new versions/new software · Performance of overall system · Interfaces: - Communication with outside parties, companies, fed, county, agencies - Send and exchange information · Wide variety of hardware · Security Issues · Select from multiple vendors · Recommendations including cost, performance factors · Dynamic business - rapid change	
PLANNING (Strategic) · resource utilization · disaster planning · change control management · evaluate new products · new technologies · compatibility · security · cost benefit analysis	· Standardized environment · Similar users and hardware · Security - internal users · Disaster Planning - stand-alone system (no dependencies) · Evaluation of products new to agency	· Variety of applications and operating systems · Variety of users and hardware · Security - external users (other agencies) - interaction with other software and hardware · Disaster Planning - legal mandates for processing - other entities relying on your operations · Evaluation of products new to the state or industry	· Distributed needs within agency · Multiple agencies in work flow · Competition for resources · Communication with outside parties, companies, fed, county, agencies - Send and exchange information · Security - public access - dial-in access · Evaluation of new approaches and new directions	· Need for integrating multiple systems from multiple organizations (State, County, Federal, private) · Select; test with existing systems; evaluate for adoption: technology new to industry · Write inter-governmental, multi-platform project plan for multiple heterogeneous project teams

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	HARDWARE DEVICES (PC, server, mainframe, peripherals, etc.)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CUSTOMER ASSISTANCE (help use and fix) · diagnose user problems · user questions · equipment problems · coordinate solutions · track and report problems · training on use of hardware · disaster recovery · repair and replacement	· Areas of Responsibility: - Do on the phone - Basic Diagnostic - Eliminate Possibilities - Determine who gets Referral - Start Documentation - Use history to assess problem - Simple, 'plug-in' replacements · Product Mix: - One Building/location - Highly standardized - Established system/minimal expansion	· Areas of Responsibility: - On-site Evaluation - Analyze error codes/diagnostic messages - trace/analysis tools - physical repair - Vendor contacts (questions) - External contacts (Vendors, phone companies., etc.) - Conduct training (on Hardware) - Replace cards · Product Mix: - Remote location + no established backbone + create the connections (responsible for Communication Hardware) - Mixed Environment (Multiple Standards) - Moderate Expansion/Change	· Areas of Responsibility: - Physical repair - soldering, cabling - Multiple Vendor Issues - Coordinate problem solving with other IS Staff · Product Mix: - Multiple Remote locations - Mixed Environment - Massive expansion/change · Customer base includes multiple jurisdictions - support their HW	
OPERATIONS (day-to-day) · inventory management · installation · high volume report production · high volume report distribution · order processing	· Product Mix: - One Building/location - Highly standardized - Established system/minimal expansion · Simple memory upgrades · Order Processing - on contract - direct replacement	· Product Mix: - Remote location + no established backbone + create connection (responsible for Communication Hardware) - Mixed Environment (Multiple Standards) - Moderate Expansion/Change · Major Upgrades (e.g., 486 to Pentium) · Order Processing - Request for Proposal - new item not on contract	· Product Mix: - Multiple Remote locations - Mixed Environment - Massive expansion/change · System Upgrades and migrations · Order Processing - Request for Proposal - new item not on contract · Customer base includes multiple jurisdictions - support their HW	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	HARDWARE DEVICES (PC, server, mainframe, peripherals, etc.)			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CONSTRUCTION (new) · business analysis/research · evaluate and recommend options · negotiate with vendors · vendor contracts/mgmt	· Product Mix: - One Building/location - Highly standardized - Established system/minimal expansion · Simple memory upgrades	· Product Mix: - Remote location + no established backbone + create connection (responsible for Communication Hardware) - Mixed Environment (Multiple Standards) - Moderate Expansion/Change · Major Upgrades (e.g., 486 to Pentium) · Multiple vendors	· Product Mix: - Multiple Remote locations - Mixed Environment - Massive expansion/change · System Upgrades and migrations · Customer base includes multiple jurisdictions - consider their HW	
PLANNING (Strategic) · resource utilization · disaster planning · new technologies · acquisition planning · volume/capacity plan · system features-attributes · configuration · compatibility · security · cost benefit analysis · performance analysis	· Product Mix: - One Building/location - Highly standardized - Established system/minimal expansion · Test new HW releases	· Product Mix: - Remote location + no established backbone + create connection (responsible for Communication Hardware) - Mixed Environment (Multiple Standards) - Moderate Expansion/Change	· Product Mix: - Multiple Remote locations - Mixed Environment - Massive expansion/change · Customer base includes multiple jurisdictions - plan for their HW	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	DATA			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CUSTOMER ASSISTANCE (help use and fix) · data analysis · user ad-hoc reporting · user support areas · reports/extract information	· Work over Phone · Common user questions from internal employees · Performs problem analysis, troubleshooting · Single environment ·Tests features	· Problem referral from IS staff, not direct user contact · Problems affect entire agency · Training users, formal and informal · Contact vendor to solve problems · Mixed environment · Sharing data with other entities	· Problems affecting State · Conflict resolution · Mission critical problems /data · Mixed environment of data base management systems · Distributed data	
OPERATIONS (day-to-day) · data protection · version control · version compatibility · data quality control · back-up · data base performance monitoring, tuning	· Single Data base (central) · Security covered by other operational functions · Internal Users with Limited Access · Program Control (Database takes anything program sends it) · Timed back up of entire file. · Monitors, identifies performance problems and issues.	· Multiple Data bases (central) - Not distributed-no need to interact. · Security covered by other operational functions · Internal Power Users - Strong Tools · Database definitions and program Control - Conflicting Instructions - DB defines values/compatibility with other programs - Maintain data dictionary · journalize - track changes (who, what) - Detailed Recovery · Diagnose and Tune Problems/ Issues · Manages physical storage	· Relational Databases as well as VSAM File - Distributed Databases - Multiple Databases · Data Level Security · External Users (Feds, Counties) w/update access · Relational Integrity - Constraints - Linked Tables - Consistency · Redundant system - Fault Tolerant · Makes recommendations on performance tuning, considering - cost - specifications - organization policies on expansion	

INFORMATION SYSTEMS DICTIONARY - SUPPLEMENTAL

ORGANIZATIONAL FUNCTION	DATA			
	COMPLEXITY LEVEL 1	**COMPLEXITY LEVEL 2**	**COMPLEXITY LEVEL 3**	**COMPLEXITY LEVEL 4**
CONSTRUCTION (new) · business analysis/research · design & create · modeling data · documentation · vendor contracts/mgmt · inventory - data dictionary	· Uses established standards for database questions · Single table at a time - Build tables separately and then tie together (maybe) · Contact vendors to ask questions · Use in-house consultants	· Establishes standards and precedents · Plans a set of tables for an application · Decides which data goes in which table · Uses data dictionary · Contact vendors to ask questions	· Major change in Technology - (new technology to Agency) · Logical Design (model) - Uses a Tool Set for modeling standards - Interested in data elements between different tables · Distributed data - read only · "Normalizing" data · Updates the data dictionary · Interprets/enforces documentation for dictionary · Vendors: Interpret/research	· New technology to the State · Decides what tools to use - Sets data standards - Consensus decision authority - Metadata (dictionary) - Approves design changes - Sets documentation policies & procedures - Vendor selection/assessment - RFP writing, evaluation · Distributed data - remote input & manipulation · Mixed environment of database management systems
PLANNING (Strategic) · enterprise modeling · data storage · change control management · security · compatibility · disaster planning · volume/capacity · data base performance monitoring · resource utilization · cost benefit analysis	· Apply data base management standards · Evaluate & recommend DBMS software and system support tools · Monitor data usage and determine maintenance requirements · Media management - Apply resource allocation standards	· Monitor and tune performance · Implement data security measures · Identify opportunities where the data resource could provide better benefit to the organization · Broad business perspective · Conceptual and logical data modeling · Enterprise modeling evaluate & recommend new platforms, DBMS, application systems and utilities	· Establish & enforce metadata standards · Decide issues of data sharing, location, usage, security, integrity, flexibility · Recommend changes in business operations to better exploit the data resource · Review & approve logical data models and physical design standards · Select DBMS tools · conduct training in modeling and design · Decide resource allocation · Verification of data integrity	